

chamber at the level of the hearth; notwithstanding this fact, in metallurgical plants for smelting copper, lead and some other metals, a number of old furnaces are still in use which work on the updraft principle.

Fig. 107 shows a reverberatory copper-refining furnace, the waste gases from which are removed at the top. In this case the metal in the bath is in contact with the coolest gases in the heating chamber, and this very certainly lowers the working

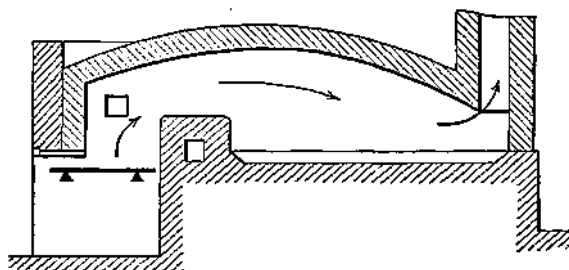


FIG. 107.

temperature of the furnace/¹* or results in the expenditure of a larger amount of fuel than would otherwise be necessary.

XVI. SIEMENS TYPE REHEATING FURNACES

Furnaces of the Siemens type are symmetrical, and the flues and ports through which the gases pass to the heating chamber serve also for the removal of the products of combustion. When reheating furnaces are constructed according to this system, the head construction of the open-hearth melting furnace is frequently copied, a procedure for which there is no necessity, owing to the difference in the purpose for which the heating furnace is used.

This difference affects the operation of the furnace in two important respects:

1. The temperature to which ingots must be reheated for rolling or forging does not exceed 1300°, and, for this reason it is not desirable to direct the jet of flame from the ports directly upon them. For the open-hearth melting

furnace, on the con-

⁽¹⁾ In regard to the method of computation for these furnaces, refer to